DEPARTMENT OF DEFENSE

DEFENSE LOGISTICS AGENCY

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Cost of a Preaward Survey

Operations Research and Economic Analysis Office

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COST OF A PREAWARD SURVEY

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DLA-LO

FOREWORD

The Defense Logistics Agency (DLA) Directorate of Contracting requested that DLA's Operations Research and Economic Analysis Office, DLA-LO, quantify the costs incurred by DLA in performing a preaward survey. The Policy Branch of the Contracts Division is attempting to incorporate this cost into the bid evaluation process when the apparent low bidder has a questionable performance history. This report documents and summarizes the efforts and conclusions reached in this analysis.

The costs of a preaward survey were found to be significantly different depending on whether a formal or an informal preaward survey was accomplished. The costs, when it is known that only an informal survey is needed, were $37 for the effort involved in the preaward survey and 0.00825 percent of the contract value for holding the increased safety level caused by the preaward survey. When it is known that a formal preaward survey is needed, these costs are $1075 and 0.2805 percent of the contract value, respectively. If there is no knowledge of which type of survey is needed, a weighted average based on past history of preaward surveys completed could be used. In this case, the cost of the effort would be $369 and the cost of the increased safety levels would be 0.09488 percent of the contract cost.

The primary recommendation of this report is that this cost of a preaward survey, based on the actual contract value in question, be implemented as determined appropriate by the Directorate of Contracting.

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I. INTRODUCTION

A. Background. A preaward survey is one tool used by a contracting officer to determine contractor responsibility. The Policy Branch of DLA's Contracts Division (DLA-PPR) is examining the possibility of incorporating the cost of a preaward survey into the bid evaluation process, when the apparent low bidder has a questionable performance history. This cost would more closely reflect the true cost of doing business with the apparent low bidder. At present, no defensible estimate of the cost of a preaward survey exists.

B. Objective. The purpose of this study is to provide a defensible estimate of the cost to DLA for performing a preaward survey.

C. Scope

1. This study is limited to the quantification of DLA incurred costs. Although there are costs external to DLA, they would be far more difficult, if not impossible, to obtain and verify. Quantifying the costs to DLA will at least provide a firm lower bound for the cost of a preaward survey.

2. This study considers only preaward surveys completed for hardware commodities and the clothing and textile commodity.

II. CONCLUSIONS

A formal preaward survey performed by DLA costs $1,075 in direct costs and 0.2805 percent of the contract value in safety level costs. For a typical contract with a value of $413,000, the total cost would be $2233. The cost for an informal preaward survey was determined to be $37 plus 0.00825 percent of the contract value in question (typically about $71). This large difference is due to the fact that a formal preaward survey takes significantly more time to accomplish. This increases both the labor needed and the administrative lead time (ALT), which increases the safety level costs. In order to use these factors for formal and informal surveys, guidelines must be established that determine, during bid evaluation, which type of survey would be performed. If it cannot be determined which type of survey will be performed, a cost based on a weighted average could be used. This cost would be $369 in direct costs plus 0.09488 percent of the contract value in indirect costs.

III. RECOMMENDATIONS

It is recommended that the cost of a preaward survey, determined using the actual contract value, be used during the bid evaluation process. Also, guidelines should be established to determine, during bid evaluation, whether a formal or an informal survey would be performed. The data used in this study is current as of the date of its release. As time progresses, this cost will become less accurate. It is recommended that, at a minimum, the relative weighting of the number of informal to formal surveys be updated each year. All calculations should be updated every two years to reflect changes in the Defense Integrated Management Engineering System (DIMES) standards, possible shifts in the types of surveys requested, etc. If all hardware centers began using electronic databases in place of handwritten logs, the process of updating these results would be much easier.

IV. METHODOLOGY

A. Assumptions

1. The relative frequencies of factors requested in a preaward survey (i.e., technical capability, production capability, quality assurance, etc.) are not maintained for all Defense Contract Administration Services (DCAS) performed preaward surveys, but are maintained at one DLA hardware center (Defense General Supply Center) for their contracts. It is assumed for this study that the relative frequencies of requested factors are representative for preaward surveys done for the other hardware centers and for the Clothing and Textile commodity at the Defense Personnel Support Center (DPSC).

2. Conducting a preaward survey results in a one time increase in ALT for a particular procurement. This one time increase results in an increase in the lead time of record in the Standard Automated Materiel Management System (SAMMS) for the item being procured. On the next procurement for this item, this increased lead-time of record will translate into an increase in the safety level required to be procured for this item. This increase in the safety level is only temporary; it begins to fall back to the original starting point during the next procurement cycle. It is assumed for this study that the investment cost for the increased safety level is recovered as the safety level drops back to normal; therefore, only the holding cost associated with the increased safety level should be included in the cost of a preaward survey.

3. An average distance and travel time is used for all personnel who travel to a contractor's facility for an on site survey. While the government personnel may come from different locations, the same average distance and travel time are used for each person involved in the preaward survey.

B. Sources of Data

1. Defense Supply Centers. The primary source of data on man-hours expended in the supply centers was obtained through telephone interviews with the preaward survey monitors in each center. Each center preaward survey monitor was contacted, and through these interviews an estimate of time spent on a representative preaward survey was developed.

2. Defense Contract Administration Services. There were two main sources of data for man-hours expended in DCAS for preaward surveys. The first source of data were DIMES standards. For tasks within DCAS where no standards were available, experts were interviewed to determine estimated man-hours per task.

3. Travel Data. In a recent DLA-LO study, "In-House Cost of Source Inspection," July 1987, an estimate of a quality assurance specialist's average distance traveled and time expended in travel to a contractor's facility was developed. The average distance was 51.3 miles (round trip), and the average time required for travel was 2.9 hours (round trip). These

estimates will be used as the average time and distance for DCAS personnel traveling to contractor's facilities for preaward surveys. Since this cost is relatively small in relation to the other labor costs, the preaward survey cost is not sensitive to this assumption.

4. Safety Levels. Since a preaward survey is a time consuming task, performing a preaward survey will increase the ALT associated with a particular contract. This increase in ALT will normally cause safety levels held at the defense supply depots to increase. To determine the amount of time that a preaward survey normally takes, copies of the log books maintained by the centers' preaward survey monitors were obtained. From these logs, the average time delay -- from the time the survey was requested until it was returned to the buyer -- was computed to be 34 days. In order to determine the cost of any safety level increase associated with this delay, the safety level cost quantification strategy of DLA-LO project 7003, "Analysis of the Cost of Late Contractor Delivery," September 1987, was used. This study used a modified version of the Projected Performance Model (PERMES) from the Materiel Readiness Decision Support System to compute safety levels for items, varying the lead-time. Two additional modifications have been made for this study:

a. Only large dollar purchases were used in computing the safety levels (since preaward surveys are not normally performed for contracts with a cost of less than $25,000), and

b. Only the holding costs associated with the temporary increase in safety levels were used.

C. Approach. This analysis was divided into two parts. The first part of the analysis examined the direct costs of a preaward survey. These costs were primarily the expenditure of labor to perform and track a preaward survey. The second part of this analysis involved quantification of the costs associated with the delay in awarding the contract due to the preaward survey. The costs were identified in the increased safety levels resulting from increased lead times. All costs provided are FY88 dollars.

1. Direct Cost Methodology. The approach used to develop the direct costs of a preaward survey was to (1) identify the functions performed by DLA for a preaward survey, (2) construct a decision tree of the possible processing paths in conducting a preaward survey, (3) develop cost estimates (labor and travel requirements) for each subtask of the decision tree, (4) develop probabilities for each branch in the decision tree, and (5) compute the expected cost of the preaward survey from the subtask cost and branch likelihood information. Base hourly pay was found from a current (1988) pay scale. A leave benefit factor of 18%, from DLAM 7041.1, "Economic Analysis," May 1985, was used. Also, an adjustment of 27.05%, from the Office of Management and Budget Circular number A-76, Revised Transmittal Memorandum # 6, March 1988, Subject: Revised Retirement Cost Factors, was used for fringe benefits. This factor includes the government contribution to civilian retirement, social security, disability, health, and life insurance.

2. Safety Level Cost Methodology. The approach used to develop the indirect costs was to (1) determine the average number of days required to perform a preaward survey, (2) determine the average contract cost for contracts on which a preaward survey was performed, (3) run a supply performance model to compute changes in safety levels resulting from changing the ALT, (4) compute an overall daily lateness cost expressed as a percent of the contract cost, and (5) compute the 'average' safety level cost using the daily lateness cost, the number of days late, and the average contract cost.

V. ANALYSIS

A. Overview of the Preaward Survey Process. If the buyer and the supply center preaward survey monitor have insufficient information available about a particular contractor for the buyer to make a responsibility determination, the supply center monitor will contact the preaward survey monitor in the appropriate DCAS organization. The DCAS monitor will review the information immediately available and provide it to the supply center monitor by telephone. This is known as an informal preaward survey. If this information is not adequate for the supply center procurement personnel to make their decision, the supply center preaward survey monitor will formally request that the appropriate DCAS organization perform a formal preaward survey. This formal survey can take either one of two forms, i.e., a desk survey or an on-site survey.

B. Analysis of Direct Costs

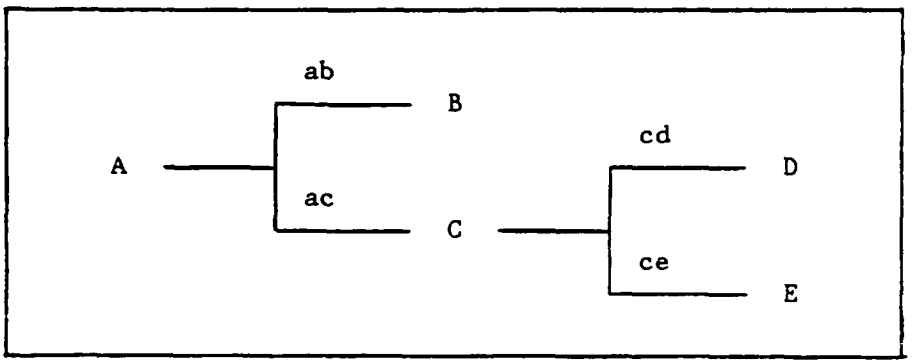
1. Supply Center Functions. The majority of preaward surveys that are completed for DLA originate with a request from a buyer to the center preaward survey monitor. The center monitor reviews the request, and coordinates a survey through DCAS (either informal or formal). While a formal survey is being worked by DCAS, the center monitor handles all necessary correspondence between DCAS and the buyer, such as clarification of terms of a contract or resolving discrepancies with drawings. The center monitor is also responsible for following a preaward survey to ensure that it is completed in a timely manner. When a survey is complete, it is returned to the center monitor, who reviews the results of the survey and passes the recommendation on to the buyer. Although there is a significant difference in the amount of time required for DCAS to do the desk and on-site surveys, the amount of effort at the center level is basically the same for both.

2. DCAS Functions. Since a preaward survey is labor intensive, the majority of the costs involved will be directly related to the number of people involved in the preaward survey. The number of people involved in a preaward survey depends on two things, (1) the type of survey performed (informal, desk, or on-site), and (2) the types of factors requested for the preaward survey (technical capability, production capability, quality assurance, financial capability, etc.). For an informal survey, the DCAS monitor passes along all available information by telephone. For a formal survey, the information gathered is based on the specific factors requested by the supply center preaward survey monitor. When a formal request arrives at DCAS, a determination is made as to whether a desk survey or an on-site survey must be performed. Historically, only around eight percent of these requests

result in a desk survey. DCAS personnel are then assigned to perform the individual portions of the preaward survey, based on the requested factors. Most of the time, each factor is handled by different individuals.

3. Preaward Survey Cost Computation Methodology. The expected cost of a preaward survey is derived by first computing the expected cost of each branch of the decision tree and then summing these costs. For example, consider the sample decision tree in Figure 1. There are five nodes denoted A, B, C, D, and E. Nodes B and C represent subtasks under node A, while nodes D and E represent subtasks under node C. There are four path probabilities

Figure 1. SAMPLE DECISION TREE



denoted ab, ac, cd, and ce. The path probability ab represents the probability of subtask B occurring under node A. With each subtask at the lowest level there is a cost associated with performing the subtask. Therefore the expected cost at node A in this instance can be computed using the formula:

$$(ab * B) + (ac * ((cd * D) + (ce * E)))$$

The costs for a preaward survey are computed in the same manner using the decision tree representing the tasks performed to accomplish a preaward survey.

4. Decision Tree. The decision tree constructed for a preaward survey is shown in Figure 2. The decision tree describes the tasks performed for a preaward survey. Since the supply centers' effort is comparable on both a desk and an on site survey, it is listed only once in the 'formal preaward' branch of the decision tree.

5. Subtask Cost Estimates. The cost estimates for the decision tree nodes are shown in Table 1. These cost estimates include direct labor expended on the tasks, leave and fringe benefits, travel time where indicated, and travel at the current rate of twenty one cents per mile. The sources of this information included DIMES special purpose data standards, as well as

Figure 2. DIRECT COST DECISION TREE

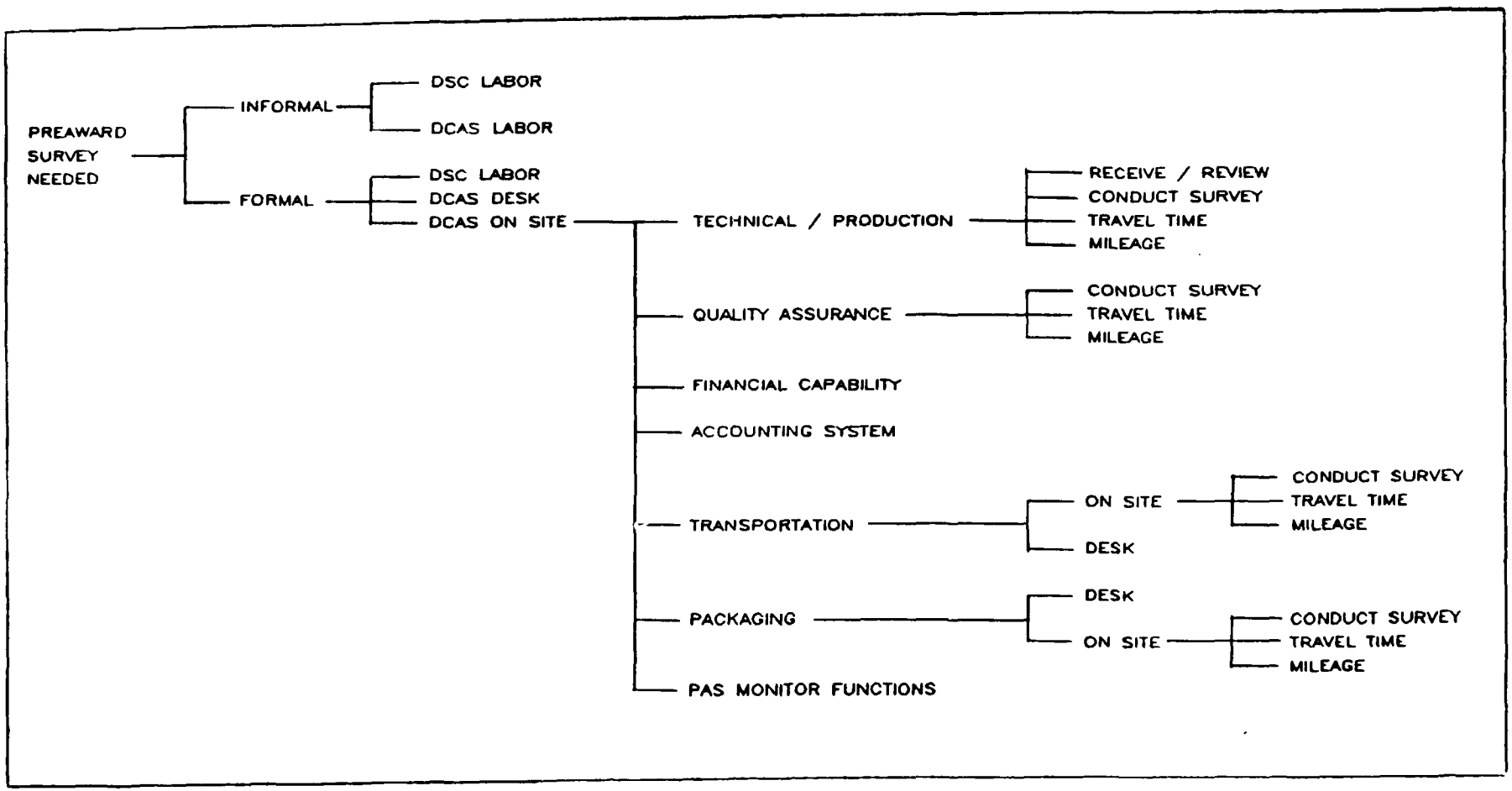


Table 1.

DIRECT COST SPREADSHEET (WEIGHTED AVERAGE).

NODE	PROB	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	LABOR	MILEAGE	TOTALS
INFORMAL	0.68	DSC	1.00	0.75										$11.51		
		DCAS	1.00	0.75										$13.79		
																$25.30
FORMAL	0.32	DSC	1.00	2.86										$20.65		
		DCAS DESK	0.08	6.06										$4.19		
		DCAS ON S	0.92		TECH/PROD	0.84		REC & REV	1.00	4.13				$27.80		
								SURVEY	1.00	16.74				$93.87		
								TRAVEL	1.00	2.90				$16.27		
								MILES	1.00	51.30					$2.68	
					Q A	0.83		SURVEY	1.00	11.05				$61.06		
								TRAVEL	1.00	2.90				$16.03		
								MILES	1.00	51.30					$2.64	
					FINANCIAL	0.68		SURVEY	1.00	8.56				$38.48		
					ACCOUNTIN	0.03		SURVEY	1.00	16.00				$3.41		
					TRANSPORT	0.21		ON SITE	0.20		SURVEY	1.00	1.73	$0.50		
											TRAVEL	1.00	2.90	$0.83		
											MILES	1.00	51.30		$0.14	
								DESK	0.80		SURVEY	1.00	0.61	$0.68		
					PACKAGING	0.44		DESK	0.64		SURVEY	1.00	0.90	$1.68		
								ON SITE	0.36		SURVEY	1.00	2.02	$2.14		
											TRAVEL	1.00	2.90	$3.07		
											MILES	1.00	51.30		$0.50	
					PASM	1.00	6.16							$49.04		$343.97
														SUM OF FORMAL AND INFORMAL		$369.27

estimates from functional experts. Based on conversations with preaward survey monitors and with DLA-AP, the following grade levels were assumed for the functions represented in the decision tree: defense supply center monitors - GS 11/5, DCAS monitors - GS 12/5, specialists for each factor - GS 11/5.

6. Branch Probabilities. The branch probabilities for the decision tree are also shown in Table 1. As with the subtask cost estimates, the decision branch probabilities were obtained from work standards and best estimates, as well as data from one centers' preaward survey data base. These probabilities actually represent the frequency at which a specified task is performed. Appendix A includes a line by line breakdown for the sources and values used for the direct cost decision tree.

7. Direct Cost Findings. Using the approach outlined above, the average cost to DLA for a preaward survey was computed to be $369 (see Table 1). This average cost is sensitive to several of the input values. One such input value is the relative weight between informal and formal preaward surveys. If this branch could be eliminated from the tree (because of the preaward survey monitor's knowledge), a much closer estimate could be used. For instance, if it was known that an informal survey was needed (branch weight of 1.0 for an informal and 0.00 for a formal survey), a total direct cost of $37 could be used; if it was known that a formal survey was needed (branch weight of 0.00 for an informal and 1.00 for a formal survey), a total direct cost of $1,075 could be used. These calculations are shown in Tables A-1 and A-2 in Appendix A. The cost is very sensitive to this branch probability due to the large difference in the amount of effort necessary to complete each of the two different types of surveys.

C. Analysis of Safety Level Costs

1. Length of a Preaward Survey. Although each preaward survey is different, an average length (in days) can be determined from historical results. The delay caused by a preaward survey is the amount of time between the buyer's request for data on a specific contractor, and the receipt of that information. For an informal survey, no data is kept on how long this time span is. Since only a minimal delay is caused by an informal survey, one day will be used as the estimate of the delay for an informal preaward survey. In order to determine the delay caused by a formal preaward survey, preaward survey monitor's logs were requested from all DLA hardware centers plus the Clothing and Textile commodity at DPSC. Copies of handwritten logs were received from the Defense Construction Supply Center (DCSC), the Defense Electronics Supply Center (DESC), and DPSC; an electronic database file containing the necessary data was received from the Defense General Supply Center (DGSC). No data was available from the Defense Industrial Supply Center (DISC). The data received included dates for all preaward surveys completed at the respective centers for FY87 and the first two quarters of FY88. The average number of days needed for a formal preaward survey was found to be 34. After consideration of the surveys performed and consultation with experts at the centers and at Headquarters DLA, this number was determined to be a reasonable estimate for DLA wide use.

2. Average Contract Value. To determine the average contract value, the estimated contract values on the preaward survey monitor's logs were used. In addition to the lack of data from DISC, DPSC data on contract cost was not available. The average contract cost from DCSC, DESC, and DGSC was $412,947. After consultation with experts at the centers and at Headquarters DLA, this number was determined to be a reasonable estimate for DLA wide use.

3. Safety Level Computation. As stated earlier, the results of a previous DLA-LO project 7003, "Analysis of the Cost of Late Contractor Delivery," September 1987, were used as a basis to determine the change in safety levels for preaward surveys. Since this earlier study dealt with increases in the production lead time (PLT), the results could not be used directly. Two basic changes in approach were needed.

a. First, since the delay resulting from conducting a preaward survey only temporarily increases the lead-time of record and thus the safety level, only the holding costs associated with these increased safety levels were computed. The SAMMS holding cost rate varies from center to center. The median value of 18 percent per year was used for computations.

b. The second change made to the original model was to use only items where the cost of the economic order quantity was over $25,000, since formal preaward surveys are not normally done on contracts of less than this value.

c. Using these changes to the PERMES model used in DLA-LO project 7003, the average cost of holding the increased safety levels resulting from conducting a preaward survey was computed to be .00825 percent of the contract value per day. Since a few formal and some informal preaward surveys are performed for contracts with a cost of less than $25,000, the appropriateness of the above factor in these situations (i.e. small purchases) was considered. Additional calculations were made using the results of DLA-LO project 7003. Based on the change in safety level costs in DLA-LO project 7003 (where the analysis included small purchases), and on the holding cost rate used in this study, this safety level cost factor was also found to be acceptable for the smaller dollar purchases. Information needed to update this factor in the future is located in Appendix B.

4. Safety Level Cost Findings. Based on the relative frequency of occurrence of 68 percent informal surveys to 32 percent formal surveys, the average increase in ALT would be 11.56 days (1 * .68 + 34 * .32). The average cost of a preaward survey in terms of added lead time would be $394 (11.56 * 412,947 * .0000825). As was the case in the direct cost findings (section V.B.7), this cost is sensitive to the relative weighting of informal to formal preaward surveys. To demonstrate how sensitive this cost is to this parameter, suppose it were known that an informal survey were needed (branch weight of 1.0 for an informal and 0.00 for a formal survey), a safety level cost of $34 could be used; if it were known that a formal survey were needed (branch weight of 0.00 for an informal and 1.00 for a formal survey), a safety level cost of $1,158 could be used.

D. Use as a Bid Evaluation Factor. This section explains two possible alternatives for applying the cost of a preaward survey developed in this study as a bid evaluation factor.

Alternative 1: Average Contract Value. The easiest approach that could be implemented would be to use a bid evaluation factor based on the average contract value discussed in section V.C.2. Table 2 breaks out this cost in three ways; if it is known that an informal preaward survey is needed, if it is known that a formal preaward survey is needed, or if there is no knowledge on the type of survey needed. The use of this alternative would tend to overstate the cost for small purchases, and understate the cost for extremely large purchases.

Alternative 2: Actual Contract Value. The recommended approach would be to use a bid evaluation factor based on the actual value of the contract in question. The formulas needed for this type of implementation are listed in Table 2. For instance, if you have a $100,000 contract and it is known that a formal survey would be required, the evaluation factor would be $1,356. This approach may be a bit more difficult to implement, but the bid evaluation factor would be based on the actual contract value, instead of an average. This would be especially beneficial in applying this factor to small purchases.

Table 2.

SUMMARY OF ALTERNATIVES

Type of Survey Needed	Alternative 1: Using Average Contract Value	Alternative 2: Using Actual Contract Value
Informal Survey	$71	$37 + (CV * .0000825)
Formal Survey	$2,233	$1,075 + (CV * .0028050)
Unknown	$763	$369 + (CV * .0009488)

CV = Actual Contract Value

Appendix A

Background Information for the Direct Cost Decision Tree

Background Information for the Direct Cost Decision Tree

1. INFORMAL SURVEY -

Weighted Probability = 0.680
Source : Fraction of all preaward surveys that were informal, from the DLA Management Information System, data elements 622112 and 200B00.

1.1. DSC LABOR -

Weighted Probability = 1.000
Effort : .75 hours
Source : Estimate from conversations with supply center preaward survey monitors.

1.2. DCAS LABOR -

Weighted Probability = 1.000
Effort : 0.75 hours
Source : Estimate from conversations with DLA-AP.

2. FORMAL SURVEY -

Weighted Probability = 0.320
Source : Fraction of all preaward surveys that were formal, from the DLA Management Information System, data elements 622112 and 200B00.

2.1. DSC LABOR -

Weighted Probability = 1.000
Effort : 2.86 hours
Source : Estimate from conversations with supply center preaward survey monitors.

2.2. DCAS DESK SURVEY -

Weighted Probability = 0.080
Effort : 6.055 hours
Source : DIMES SPD standard 2241 (DLA base).

2.3. DCAS ON SITE SURVEY -

Weighted Probability = 0.920
Source : DIMES SPD standard 2241 (DLA base).

2.3.1. TECHNICAL or PRODUCTION CAPABILITY SURVEY -

Weighted Probability = 0.839
Source : DGSC-PRI database on preaward surveys, frequency of requests.

2.3.1.1. RECEIVE and REVIEW SURVEY REQUEST -

Weighted Probability = 1.000
Effort : 4.134 hours
Source : DIMES SPD standard 2241 (DLA base).

2.3.1.2. CONDUCT SURVEY -

Weighted Probability = 1.000
Effort : 16.735 hours
Source : DIMES SPD standard 2241 (DLA base).

2.3.1.3. TRAVEL TIME ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Effort : 2.90 hours
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.1.4. MILEAGE ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Miles : 51.30
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.2. QUALITY ASSURANCE CAPABILITY SURVEY -

Weighted Probability = 0.829
Source : DGSC-PRI database on preaward surveys, frequency of requests.

2.3.2.1. CONDUCT SURVEY -

Weighted Probability = 1.000
Effort : 11.05 hours
Source : Estimate from quality assurance specialists at DCASR level.

2.3.2.2. TRAVEL TIME ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Effort : 2.90 hours
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.2.3. MILEAGE ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Miles : 51.30
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.3. FINANCIAL CAPABILITY SURVEY -

Weighted Probability = 0.676
Source : DGSC-PRI preaward survey database, frequency of requests.

Effort : 8.563 hours
Source : DIMES SPD standard 3510.

2.3.4. ACCOUNTING SYSTEM REVIEW -

Weighted Probability = 0.032
Source : DGSC-PRI preaward survey database, frequency of requests.

Effort : 16.0 hours
Source : Estimate from DCAA.

2.3.5. TRANSPORTATION -

Weighted Probability = 0.210
Source : DGSC-PRI preaward survey database, frequency of requests.

2.3.5.1. SURVEY DONE ON SITE -

Weighted Probability = 0.204
Source : DIMES SPD standard 2341.

2.3.5.1.1. CONDUCT SURVEY -

Weighted Probability = 1.000
Effort : 1.732 hours
Source : DIMES SPD standard 2341.

2.3.5.1.2. TRAVEL TIME ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Effort : 2.90 hours
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.5.1.3. MILEAGE ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Miles : 51.30
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.5.2. DESK SURVEY DONE -

Weighted Probability = 0.796
Effort : 0.608 hours
Source : DIMES SPD standard 2341.

2.3.6. PACKAGING -

Weighted Probability = 0.442
Source : DGSC-PRI preaward survey database, frequency of requests.

2.3.6.1. DESK SURVEY PERFORMED -

Weighted Probability = 0.640
Effort : 0.896 hours
Source : DIMES SPD standard 2342.

2.3.6.2. SURVEY PERFORMED ON SITE -

Weighted Probability = 0.360
Source : DIMES SPD standard 2342.

2.3.6.2.1. CONDUCT SURVEY -

Weighted Probability = 1.000
Effort : 2.024 hours
Source : DIMES SPD standard 2342.

2.3.6.2.2. TRAVEL TIME ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Effort : 2.90 hours
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.6.2.3. MILEAGE ALLOWANCE -

Weighted Probability = 1.000
Source : Estimate.

Miles : 51.30
Source : DLA-LO study # 6027, "In House Cost of Source Inspection," Appendix A, Table 1.

2.3.7. PREAWARD SURVEY MONITOR FUNCTIONS -

Weighted Probability = 1.000
Effort : 6.16 hours
Source : DIMES SPD standard 2244.

Table A-1.

DIRECT COST SPREADSHEET WHEN AN INFORMAL PREAWARD SURVEY IS NEEDED.

NODE	PROB	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	LABOR	MILEAGE	TOTALS
INFORMAL	1.00	DSC	1.00	0.75										$16.92		
		DCAS	1.00	0.75										$20.28		
																$37.21
FORMAL	0.00	DSC	1.00	2.86										$0.00		
		DCAS DESK	0.08	6.06										$0.00		
		DCAS ON S	0.92		TECH/PROD	0.84		REC & REV	1.00	4.13				$0.00		
								SURVEY	1.00	16.74				$0.00		
								TRAVEL	1.00	2.90				$0.00		
								MILES	1.00	51.30					$0.00	
					Q A	0.83		SURVEY	1.00	11.05				$0.00		
								TRAVEL	1.00	2.90				$0.00		
								MILES	1.00	51.30					$0.00	
					FINANCIAL	0.68		SURVEY	1.00	8.56				$0.00		
					ACCOUNTIN	0.03		SURVEY	1.00	16.00				$0.00		
					TRANSPORT	0.21		ON SITE	0.20		SURVEY	1.00	1.73	$0.00		
											TRAVEL	1.00	2.90	$0.00		
											MILES	1.00	51.30		$0.00	
								DESK	0.80		SURVEY	1.00	0.61	$0.00		
					PACKAGING	0.44		DESK	0.64		SURVEY	1.00	0.90	$0.00		
								ON SITE	0.36		SURVEY	1.00	2.02	$0.00		
											TRAVEL	1.00	2.90	$0.00		
											MILES	1.00	51.30		$0.00	
					PASM	1.00	6.16							$0.00		$0.00
													SUM OF FORMAL AND INFORMAL			$37.21

Table A-2.

DIRECT COST SPREADSHEET WHEN A FORMAL PREAWARD SURVEY IS NEEDED.

NODE	PROB	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	NODE	PROB	EFFORT	LABOR	MILEAGE	TOTALS
INFORMAL	0.00	DSC	1.00	0.75										$0.00		
		DCAS	1.00	0.75										$0.00		
																$0.00
FORMAL	1.00	DSC	1.00	2.86										$64.53		
		DCAS DESK	0.08	6.06										$13.10		
		DCAS ON S	0.92		TECH/PROD	0.84		REC & REV	1.00	4.13				$86.86		
								SURVEY	1.00	16.74				$293.34		
								TRAVEL	1.00	2.90				$50.83		
								MILES	1.00	51.30					$8.37	
					Q A	0.83		SURVEY	1.00	11.05				$190.82		
								TRAVEL	1.00	2.90				$50.09		
								MILES	1.00	51.30					$8.25	
					FINANCIAL	0.68		SURVEY	1.00	8.56				$120.24		
					ACCOUNTIN	0.03		SURVEY	1.00	16.00				$10.66		
					TRANSPORT	0.21		ON SITE	0.20		SURVEY	1.00	1.73	$1.56		
											TRAVEL	1.00	2.90	$2.61		
											MILES	1.00	51.30		$0.43	
								DESK	0.80		SURVEY	1.00	0.61	$2.13		
					PACKAGING	0.44		DESK	0.64		SURVEY	1.00	0.90	$5.26		
								ON SITE	0.36		SURVEY	1.00	2.02	$6.69		
											TRAVEL	1.00	2.90	$9.58		
											MILES	1.00	51.30		$1.58	
					PASM	1.00	6.16							$153.25		$1,074.91

SUM OF FORMAL AND INFORMAL $1,074.91

Appendix B

Background Information for Safety Level Cost Computation

Background Information for Safety Level Cost Computation

In order to compute the safety level cost, three variables are needed: (1) the average length (in days) of a preaward survey, (2) the contract value (either actual or an average), and (3) the safety level costs expressed as a percent of the contract cost per day. The first two variables are discussed in sections V.B.1 and V.B.2, respectively. This appendix details how the third variable was computed, to facilitate future updates of this factor. All programs used in developing the cost of a preaward survey will be maintained in a data set named 'GOR.RYAN.P8021'. The following steps were used:

Step 1: Filter PERMES Input. The input for PERMES must be filtered so that only the items appropriate for this analysis remain. The items that are discarded are: nonstocked items, zero demand items, zero unit price items, items with numeric stockage objective status (since these items do not have safety levels), and items whose economic order quantity cost is less than $25,000 (since formal preaward surveys are not normally accomplished for contracts which cost less than this figure).

Step 2: Compute the Average Procurement Cycle Period. A simple average based on the value of the procurement cycle period is computed for the filtered PERMES input data. The current average is four months.

Step 3: Run PERMES. Two runs of PERMES are needed to determine the cost of increasing the safety level. One run is made with no change in lead time, and one run is made with an increase of ninety days. The difference in these two values, divided by ninety, is output for each National Stock Number (NSN) in the PERMES input file. Also, the dollar cost of the economic order quantity is output.

Step 4: Compute the Holding Cost Rate. The holding cost is determined as a percentage of the cost of the safety level. The holding cost rate is based on:

1. 18 % yearly holding cost,
2. 4 month procurement cycle period, and
3. the calculation of the ALT of record.

The computations for the portion of the holding costs expended in the first two years would be:

First Buy : 18 % * 1/3 * 1 = 6.000
Second Buy: 18 % * 1/3 * 1/3 = 2.000
Third Buy : 18 % * 1/3 * 1/9 = .667
First year Total = 8.667 %

Fourth Buy: 18 % * 1/3 * 1/27 = .222
Fifth Buy : 18 % * 1/3 * 1/81 = .074
Sixth Buy : 18 % * 1/3 * 1/243 = .024
Second Year Total = .320 %

The holding costs are then discounted by the use of the factors contained in table 5-2 of DLAM 7041.1, "Economic Analysis," and summed. For the first two years listed this would be:

Holding Costs = (8.667 * 1.0) + (.320 * .909) = 8.958 %

In the above equation, a sufficient number of terms must be included to eliminate the effects of the one time increase in ALT. Because of the small procurement cycle period (four months), only a total of three years was included, for total holding costs of 8.967 percent of the safety level cost.

Step 5: Compute Holding Costs. Each NSN's safety level cost is then multiplied by the holding cost rate developed in step 4. Only these holding costs should be assessed, since the increase in safety level is only temporary.

Step 6: Compute Cost Factor. Once the holding costs have been computed for each NSN, averages are taken on this holding cost and the economic order quantity cost. The percent cost per day is achieved by dividing this average holding cost by the average economic order quantity cost.

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13. ABSTRACT *(Maximum 200 words)*

A preaward survey is one tool used by a contracting officer to determine contractor responsibility. The purpose of this study was to quantify the costs incurred by the Defense Logistics Agency in performing a preaward survey, in an attempt to incorporate this cost into the bid evaluation process when the apparent low bidder has a questionable performance history. The cost would more closely reflect the true cost of doing business with the apparent low bidder. This analysis was divided into two parts. The first part of the analysis examined the direct costs of a preaward survey. These costs were primarily the expenditure of labor to perform and track a preaward survey. The second part of this analysis involved quantification of the costs associated with the delay in awarding the contract due to the preaward survey. The costs were identified in the increased safety levels resulting from increased lead times. All costs provided are FY 88 dollars. The costs of a preaward survey were found to be significantly different depending on whether a formal or an informal preaward survey was accomplished.

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